

SEQUENCE LISTING

<110> Young et al.

<120> Heregulin-Like Factor

<130> PF383D1

<150> 09/097,681

<151> 1998-06-16

<150> 60/049,942

<151> 1997-06-17

<160> 22

<170> PatentIn version 3.2

<210> 1

<211> 2199

<212> DNA

<213> Homo sapiens

<400> 1

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<212> PRT
<213> Homo sapiens

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Pro Lys Phe His Thr Thr Thr Tyr Ser Thr Glu Arg Ser Glu His Phe
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Lys Pro Cys Arg Asp Lys Asp Leu Ala Tyr Cys Leu Asn Asp Gly Glu
35 40 45

Cys Phe Val Ile Glu Thr Leu Thr Gly Ser His Lys His Cys Arg Cys
50 55 60

Lys Glu Gly Tyr Gln Gly Val Arg Cys Asp Gln Phe Leu Pro Lys Thr
65 70 75 80

Asp Ser Ile Leu Ser Asp Pro Asn His Leu Gly Ile Glu Phe Met Glu
85 90 95

Ser Glu Glu Val Tyr Gln Arg Gln Val Leu Ser Ile Ser Cys Ile Ile
100 105 110

Phe Gly Ile Val Ile Val Gly Met Phe Cys Ala Ala Phe Tyr Phe Lys
115 120 125

Ser Lys Arg Asn Ile Thr Ala Asn Ser Val Ser Glu Glu Arg Trp Lys
130 135 140

Gly Leu Pro Ser Gln Glu Pro Asn Leu Gln Gln Asp Lys
145 150 155

<210> 3
<211> 645
<212> PRT
<213> Homo sapiens

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Glu Arg Gly Ser Gly Lys Lys Pro Glu Ser Ala Ala Gly Ser Gln Ser
20 25 30

Pro Ala Leu Pro Pro Gln Leu Lys Glu Met Lys Ser Gln Glu Ser Ala
35 40 45

Ala Gly Ser Lys Leu Val Leu Arg Cys Glu Thr Ser Ser Glu Tyr Ser
50 55 60

Ser Leu Arg Phe Lys Trp Phe Lys Asn Gly Asn Glu Leu Asn Arg Lys
 65 70 75 80
 Asn Lys Pro Gln Asn Ile Lys Ile Gln Lys Lys Pro Gly Lys Ser Glu
 85 90 95
 Leu Arg Ile Asn Lys Ala Ser Leu Ala Asp Ser Gly Glu Tyr Met Cys
 100 105 110
 Lys Val Ile Ser Lys Leu Gly Asn Asp Ser Ala Ser Ala Asn Ile Thr
 115 120 125
 Ile Val Glu Ser Asn Glu Ile Ile Thr Gly Met Pro Ala Ser Thr Glu
 130 135 140
 Gly Ala Tyr Val Ser Ser Glu Ser Pro Ile Arg Ile Ser Val Ser Thr
 145 150 155 160
 Glu Gly Ala Asn Thr Ser Ser Thr Ser Thr Ser Thr Thr Gly Thr
 165 170 175
 Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val Asn
 180 185 190
 Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg Tyr
 195 200 205
 Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn Tyr
 210 215 220
 Val Met Ala Ser Phe Tyr Lys His Leu Gly Ile Glu Phe Met Glu Ala
 225 230 235 240
 Glu Glu Leu Tyr Gln Lys Arg Val Leu Thr Ile Thr Gly Ile Cys Ile
 245 250 255
 Ala Leu Leu Val Val Gly Ile Met Cys Val Val Ala Tyr Cys Lys Thr
 260 265 270
 Lys Lys Gln Arg Lys Lys Leu His Asp Arg Leu Arg Gln Ser Leu Arg
 275 280 285
 Ser Glu Arg Asn Asn Met Met Asn Ile Ala Asn Gly Pro His His Pro
 290 295 300
 Asn Pro Pro Pro Glu Asn Val Gln Leu Val Asn Gln Tyr Val Ser Lys
 305 310 315 320
 Asn Val Ile Ser Ser Glu His Ile Val Glu Arg Glu Ala Glu Thr Ser
 325 330 335
 Phe Ser Thr Ser His Tyr Thr Ser Thr Ala His His Ser Thr Thr Val
 340 345 350
 Thr Gln Thr Pro Ser His Ser Trp Ser Asn Gly His Thr Glu Ser Ile
 355 360 365
 Leu Ser Glu Ser His Ser Val Ile Val Met Ser Ser Val Glu Asn Ser
 370 375 380

Arg His Ser Ser Pro Thr Gly Gly Pro Arg Gly Arg Leu Asn Gly Thr
 385 390 395 400
 Gly Gly Pro Arg Glu Cys Asn Ser Phe Leu Arg His Ala Arg Glu Thr
 405 410 415
 Pro Asp Ser Tyr Arg Asp Ser Pro His Ser Glu Arg Tyr Val Ser Ala
 420 425 430
 Met Thr Thr Pro Ala Arg Met Ser Pro Val Asp Phe His Thr Pro Ser
 435 440 445
 Ser Pro Lys Ser Pro Pro Ser Glu Met Ser Pro Pro Val Ser Ser Met
 450 455 460
 Thr Val Ser Met Pro Ser Met Ala Val Ser Pro Phe Met Glu Glu Glu
 465 470 475 480
 Arg Pro Leu Leu Leu Val Thr Pro Pro Arg Leu Arg Glu Lys Lys Phe
 485 490 495
 Asp His His Pro Gln Gln Phe Ser Ser Phe His His Asn Pro Ala His
 500 505 510
 Asp Ser Asn Ser Leu Pro Ala Ser Pro Leu Arg Ile Val Glu Asp Glu
 515 520 525
 Glu Tyr Glu Thr Thr Gln Glu Tyr Glu Pro Ala Gln Glu Pro Val Lys
 530 535 540
 Lys Leu Ala Asn Ser Arg Arg Ala Lys Arg Thr Lys Pro Asn Gly His
 545 550 555 560
 Ile Ala Asn Arg Leu Glu Val Asp Ser Asn Thr Ser Ser Gln Ser Ser
 565 570 575
 Asn Ser Glu Ser Glu Thr Glu Asp Glu Arg Val Gly Glu Asp Thr Pro
 580 585 590
 Phe Leu Gly Ile Gln Asn Pro Leu Ala Ala Ser Leu Glu Ala Thr Pro
 595 600 605
 Ala Phe Arg Leu Ala Asp Ser Arg Thr Asn Pro Ala Gly Arg Phe Ser
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<210> 4
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 <212> DNA
 <213> Homo sapiens

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<223> n equals a,t,g, or c

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aggaccttgg catactgtct caatgatggc gagtgctttg tgatcgaaac cctgaccgga 180
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gattggtnccn tcgtgggggc ntgttnngg tggcagcatt tcntaactnc caaaaagcc 420
aaaaggaggatt tttnaccggc aaatttccgt gntctgaagg gaaaattggg aagggtcttg 480
ccctttccccc aggaggccca atnngncaa caaggccat natggcntaa caaggg 536

<210> 5
<211> 25
<212> DNA
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<220>
<223> 5' primer for cloning the EGF like domain of the HLF protein

<400> 5
ggcggatccc tcttcttcct cctcc

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<210> 6
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> 3' primer for cloning the EGF like domain of the HLF protein

<400> 6
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<210> 7
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> 5' primer for amplifying the mature HLF sequence

<400> 7
ggcggtacccc ctcttcttcc tcctcc 26

<210> 8
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> 3' primer for amplifying the mature HLF sequence

<400> 8
ggcggtaccc aaacttcttc actctccatg aattcaatcc cc 42

<210> 9
<211> 120
<212> DNA
<213> Artificial sequence

<220>
<223> 5' primer, containing a Bam HI site, a Kozak sequence,
an AUG start codon, a sequence encoding the secretory leader peptide
from
the human IL-6 gene, and 16 nucleotides of the 5' coding region of the
extracellular domain of the HLF polypeptide

<400> 9
gccggatccg ccaccatgaa ctccttctcc acaagcgcct tcgggtccagt tgccttctcc 60
ctggggctgc tcctggtgtt gcctgctgcc ttccctgccc cagttcttcc ttccctctcc 120

<210> 10
<211> 42
<212> DNA
<213> Artificial sequence

<220>

<223> 3' primer, containing the Xba I and 33 nucleotides complementary to the 3' coding sequence OF HLF immediately before the stop codon

<400> 10

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42

<210> 11

<211> 48

<212> PRT

<213> Homo sapiens

<400> 11

Ser His Phe Asn Asp Cys Pro Asp Ser His Thr Gln Phe Cys Phe His
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Gly Thr Cys Arg Phe Leu Val Gln Glu Asp Lys Pro Ala Cys Val Cys
20 25 30

His Ser Gly Tyr Val Gly Ala Arg Cys Glu His Ala Asp Leu Leu Ala
35 40 45

<210> 12

<211> 50

<212> PRT

<213> Homo sapiens

<400> 12

Arg Asn Ser Asp Ser Glu Cys Pro Leu Ser His Asp Gly Tyr Cys Leu
1 5 10 15

His Asp Gly Val Cys Met Tyr Ile Glu Ala Leu Asp Lys Tyr Ala Cys
20 25 30

Asn Cys Val Val Gly Tyr Ile Gly Glu Arg Cys Gln Tyr Arg Asp Leu
35 40 45

Lys Trp

50

<210> 13

<211> 48

<212> PRT

<213> Homo sapiens

<400> 13

Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys Ile
1 5 10 15

His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys Ile
20 25 30

Cys His Pro Gly Tyr Gly Glu Arg Cys His Gly Leu Ser Leu Pro
35 40 45

<210> 14
<211> 49
<212> PRT
<213> Homo sapiens

<400> 14
Arg Lys Lys Lys Asn Pro Cys Asn Ala Glu Phe Gln Asn Phe Cys Ile
1 5 10 15

His Gly Glu Cys Lys Tyr Ile Glu His Leu Glu Ala Val Thr Cys Lys
20 25 30

Cys Gln Gln Glu Tyr Phe Gly Glu Arg Cys Gly Glu Lys Ser Met Lys
35 40 45

Thr

<210> 15
<211> 49
<212> PRT
<213> Homo sapiens

<400> 15
Lys Gly His Phe Ser Arg Cys Pro Lys Gln Tyr Lys His Tyr Cys Ile
1 5 10 15

Lys Gly Arg Cys Arg Phe Val Val Ala Glu Gln Thr Pro Ser Cys Val
20 25 30

Cys Asp Glu Gly Tyr Ile Gly Ala Arg Cys Glu Arg Val Asp Leu Phe
35 40 45

Tyr

<210> 16
<211> 52
<212> PRT
<213> Homo sapiens

<400> 16
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1 5 10 15

Asn Gly Gly Glu Cys Phe Thr Val Lys Asp Leu Ser Asn Pro Ser Arg
20 25 30

Tyr Leu Cys Lys Cys Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu Asn
35 40 45

Val Pro Met Lys
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<210> 17
<211> 53
<212> PRT
<213> Homo sapiens

<400> 17
Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val
1 5 10 15

Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg
20 25 30

Tyr Leu Cys Lys Cys Gln Pro Gly Phe Thr Gly Ala Arg Cys Thr Glu
35 40 45

Asn Val Pro Met Lys
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<210> 18
<211> 53
<212> PRT
<213> Homo sapiens

<400> 18
Thr Ser His Leu Val Lys Cys Ala Glu Lys Glu Lys Thr Phe Cys Val
1 5 10 15

Asn Gly Gly Glu Cys Phe Met Val Lys Asp Leu Ser Asn Pro Ser Arg
20 25 30

Tyr Leu Cys Lys Cys Pro Asn Glu Phe Thr Gly Asp Arg Cys Gln Asn
35 40 45

Tyr Val Met Ala Ser
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<210> 19
<211> 50
<212> PRT
<213> Homo sapiens

<400> 19
Ser Gly His Ala Arg Lys Cys Asn Glu Thr Ala Lys Ser Tyr Cys Val
1 5 10 15

Asn Gly Gly Val Cys Tyr Tyr Ile Glu Gly Ile Asn Gln Leu Ser Cys
20 25 30

Lys Cys Pro Val Gly Tyr Thr Gly Asp Arg Cys Gln Gln Phe Ala Met
35 40 45

Val Asn
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<210> 20
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<213> Artificial sequence

<220>
<223> downstream primer for synthesizing HLF cDNA

<400> 20
ccacgatgac aattccaaag 20

<210> 21
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> upstream primer for HLF PCR

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<210> 22
<211> 720
<212> PRT
<213> Homo sapiens

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20 25 30

Ala Ala Gly Gly Gly Pro Asp Gly Gly Gly Glu Gly Ala Ala Glu Pro
35 40 45

Pro Arg Glu Leu Arg Cys Ser Asp Cys Ile Val Trp Asn Arg Gln Gln
50 55 60

Thr Trp Leu Cys Val Val Pro Leu Phe Ile Gly Phe Ile Gly Leu Gly
65 70 75 80

Leu Ser Leu Met Leu Leu Lys Trp Ile Val Val Gly Ser Val Lys Glu
85 90 95

Tyr Val Pro Thr Asp Leu Val Asp Ser Lys Gly Met Gly Gln Asp Pro
100 105 110

Phe Phe Leu Ser Lys Pro Ser Ser Phe Pro Lys Ala Met Glu Thr Thr
115 120 125

Thr Thr Thr Ser Thr Thr Ser Pro Ala Thr Pro Ser Ala Gly Gly
130 135 140

Ala Ala Ser Ser Arg Thr Pro Asn Arg Ile Ser Thr Arg Leu Thr Thr
145 150 155 160

Ile Thr Arg Ala Pro Thr Arg Phe Pro Gly His Arg Val Pro Ile Arg
165 170 175

Ala Ser Pro Arg Ser Thr Thr Ala Arg Asn Thr Ala Ala Pro Ala Thr
180 185 190

Val Pro Ser Thr Thr Ala Pro Phe Phe Ser Ser Ser Thr Leu Gly Ser
 195 200 205
 Arg Pro Pro Val Pro Gly Thr Pro Ser Thr Gln Ala Met Pro Ser Trp
 210 215 220
 Pro Thr Ala Ala Tyr Ala Thr Ser Ser Tyr Leu His Asp Ser Thr Pro
 225 230 235 240
 Ser Trp Thr Leu Ser Pro Phe Gln Asp Ala Ala Ser Ser Ser Ser Ser
 245 250 255
 Ser Ser Ser Ser Ser Thr Thr Thr Pro Glu Thr Ser Thr Ser Pro
 260 265 270
 Lys Phe His Thr Thr Tyr Ser Thr Glu Arg Ser Glu His Phe Lys
 275 280 285
 Pro Cys Arg Asp Lys Asp Leu Ala Tyr Cys Leu Asn Asp Gly Glu Cys
 290 295 300
 Phe Val Ile Glu Thr Leu Thr Gly Ser His Lys His Cys Arg Cys Lys
 305 310 315 320
 Glu Gly Tyr Gln Gly Val Arg Cys Asp Gln Phe Leu Pro Lys Thr Asp
 325 330 335
 Ser Ile Leu Ser Asp Pro Thr Asp His Leu Gly Ile Glu Phe Met Glu
 340 345 350
 Ser Glu Glu Val Tyr Gln Arg Gln Val Leu Ser Ile Ser Cys Ile Ile
 355 360 365
 Phe Gly Ile Val Ile Val Gly Met Phe Cys Ala Ala Phe Tyr Phe Lys
 370 375 380
 Ser Lys Lys Gln Ala Lys Gln Ile Gln Glu Gln Leu Lys Val Pro Gln
 385 390 395 400
 Asn Gly Lys Ser Tyr Ser Leu Lys Ala Ser Ser Thr Met Ala Lys Ser
 405 410 415
 Glu Asn Leu Val Lys Ser His Val Gln Leu Gln Asn Tyr Ser Lys Val
 420 425 430
 Glu Arg His Pro Val Thr Ala Leu Glu Lys Met Met Glu Ser Ser Phe
 435 440 445
 Val Gly Pro Gln Ser Phe Pro Glu Val Pro Ser Pro Asp Arg Gly Ser
 450 455 460
 Gln Ser Val Lys His His Arg Ser Leu Ser Ser Cys Cys Ser Pro Gly
 465 470 475 480
 Gln Arg Ser Gly Met Leu His Arg Asn Ala Phe Arg Arg Thr Pro Pro
 485 490 495
 Ser Pro Arg Ser Arg Leu Gly Gly Ile Val Gly Pro Ala Tyr Gln Gln
 500 505 510

Leu Glu Glu Ser Arg Ile Pro Asp Gln Asp Thr Ile Pro Cys Gln Gly
515 520 525

Ile Glu Val Arg Lys Thr Ile Ser His Leu Pro Ile Gln Leu Trp Cys
530 535 540

Val Glu Arg Pro Leu Asp Leu Lys Tyr Ser Ser Ser Gly Leu Lys Thr
545 550 555 560

Gln Arg Asn Thr Ser Ile Asn Met Gln Leu Pro Ser Arg Glu Thr Asn
565 570 575

Pro Tyr Phe Asn Ser Leu Glu Gln Lys Asp Leu Val Gly Tyr Ser Ser
580 585 590

Thr Arg Ala Ser Ser Val Pro Ile Ile Pro Ser Val Gly Leu Glu Glu
595 600 605

Thr Cys Leu Gln Met Pro Gly Ile Ser Glu Val Lys Ser Ile Lys Trp
610 615 620

Cys Lys Asn Ser Tyr Ser Ala Asp Val Val Asn Val Ser Ile Pro Val
625 630 635 640

Ser Asp Cys Leu Ile Ala Glu Gln Gln Glu Val Lys Ile Leu Leu Glu
645 650 655

Thr Val Gln Glu Gln Ile Arg Ile Leu Thr Asp Ala Arg Arg Ser Glu
660 665 670

Asp Tyr Glu Leu Ala Ser Val Glu Thr Glu Asp Ser Ala Ser Glu Asn
675 680 685

Thr Ala Phe Leu Pro Leu Ser Pro Thr Ala Lys Ser Glu Arg Glu Ala
690 695 700

Gln Phe Val Leu Arg Asn Glu Ile Gln Arg Asp Ser Ala Leu Thr Lys
705 710 715 720